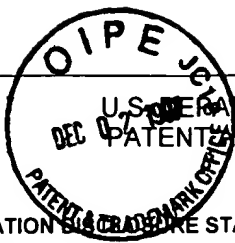


Form  
PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

## INFORMATION STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET  
NO.  
TB-101SERIAL NO.  
08/816/079

APPLICANT(S):

Grooms, Jamie M; Wironen, John F.

FILING DATE

March 13, 1997

GROUP

## U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT NUMBER | DATE     | NAME                         | CLASS | SUBCLASS | FILING DATE IF<br>APPROPRIATE |
|---------------------|----|-----------------|----------|------------------------------|-------|----------|-------------------------------|
| <i>JS</i>           | AA | 5,422,340       | 6/6/95   | Ammann, Arthur J. et al.     |       |          |                               |
|                     | AB | 5,503,558       | 4/2/96   | Clokier, M.L.                |       |          |                               |
|                     | AC | 5,292,349       | 3/8/94   | Foresti, Giancarlo           |       |          |                               |
|                     | AD | 4,440,750       | 4/3/84   | Glowacki, Julianne, et al.   |       |          |                               |
|                     | AE | 4,394,370       | 9/19/83  | Jefferies, Steven R.         |       |          |                               |
|                     | AF | 4,472,840       | 9/25/84  | Jefferies, Steven R.         |       |          |                               |
|                     | AG | 4,678,470       | 7/7/87   | Nashef, Awa S. et al.        |       |          |                               |
|                     | AH | 3,034,852       | 4/1/60   | Nishihara, Tomio             |       |          |                               |
|                     | AI | 5,484,601       | 1/16/96  | O'Leary, Robert K. et al.    |       |          |                               |
|                     | AJ | 5,073,373       | 12/17/91 | O'Leary, Robert K. et al.    |       |          |                               |
|                     | AK | 5,405,390       | 4/11/95  | O'Leary, Robert K. et al.    |       |          |                               |
|                     | AL | 5,236,456       | 8/17/93  | O'Leary, Robert K. et al.    |       |          |                               |
|                     | AM | 4,587,268       | 5/6/86   | Pfirman, Rolf W.             |       |          |                               |
|                     | AN | 5,510,396       | 4/23/96  | Prewett, Annamarie B. et al. |       |          |                               |
|                     | AO | 5,314,476       | 5/24/94  | Prewett, Annamarie B. et al. |       |          |                               |
|                     | AP | 5,356,629       | 10/18/94 | Sander, Thomas W. et al.     |       |          |                               |
|                     | AQ | 4,931,546       | 6/5/90   | Tardy Michel et al.          |       |          |                               |
|                     | AR | 4,294,753       | 10/13/81 | Urist, Marshall R.           |       |          |                               |
|                     | AS | 5,531,791       | 7/2/96   | Wolfenberger, Jr., Lloyd     |       |          |                               |
|                     |    |                 |          |                              |       |          |                               |
|                     |    |                 |          |                              |       |          |                               |
|                     |    |                 |          |                              |       |          |                               |

## FOREIGN PATENT DOCUMENTS

| EXAMINER<br>INITIAL |    | DOCUMENT NUMBER | DATE        | NAME                 | CLASS | SUBCLASS | TRANSLATION |    |
|---------------------|----|-----------------|-------------|----------------------|-------|----------|-------------|----|
|                     |    |                 |             |                      |       |          | YES         | NO |
| <i>JS</i>           | AA | W0 89/04646     | 1 June 1989 | Jefferies, Steven R. |       |          |             |    |
|                     | AB |                 |             |                      |       |          |             |    |
|                     | AC |                 |             |                      |       |          |             |    |
|                     | AD |                 |             |                      |       |          |             |    |
|                     | AE |                 |             |                      |       |          |             |    |
|                     | AF |                 |             |                      |       |          |             |    |
|                     | AG |                 |             |                      |       |          |             |    |
|                     | AH |                 |             |                      |       |          |             |    |
|                     | AI |                 |             |                      |       |          |             |    |
|                     | AJ |                 |             |                      |       |          |             |    |
|                     | AK |                 |             |                      |       |          |             |    |

EXAMINER

*JS*DATE  
CONSIDERED

3-13-98

Form PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
TB-101SERIAL NO.  
08/816,079INFORMATION DISCLOSURE STATEMENT  
(Use several sheets if necessary)

## APPLICANT(S)

Grooms, Jamie M; Wironen, John F.

## FILING DATE

March 13, 1997

## GROUP

## OTHER PRIOR ART

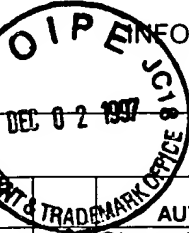
(Including Author, Title, Date, Pertinent Pages, etc.)

| *EXAMINER<br>INITIAL |  | AUTHOR(S)  | TITLE  | DATE     | PUBLICATION INFORMATION  |
|----------------------|--|--|--|----------|--|
| AA                   |  | Bard   | Contigen(TM) Bard(R) Collagen Implant Physicians' Circular   | 9/89     | Contigen(TM) Bard(R) Collagen Implant Physicians' Circular   |
| AB                   |  | Benedict, J.J.   | The role of carrier matrices on bone induction in vivo   | 1996     | Benedict, J.J, ed.; Society for Biomaterials: Denver, CO   |
| AC                   |  | Bentz, Hanne; Thompson, Andrea Y; & Armstrong Rosa et al.      | Transforming growth factor-beta2 enhances the osteo-inductive activity of a bovine bone-derived fraction containing bone morphogenetic protein-2 and 3 | 1991     | Matrix 11:269-275  |
| AD                   |  | Bergman, Stewart A. & Litkowski, Leonard J.                    | Bone in-fill of non-healing Calvarial defects using particulate Bioglass(R) and autogenous bone.   | Unknown  | Bioceramics 8:17-21  |
| AE                   |  | Black, R. John; Zardiackas, Lyle D.; & Teasdall, Robert et al. | The mechanical integrity of healed diaphyseal bone defects grafted with calcium hydroxyapatite/ calcium triphosphate ceramic in a new animal model     | 1990     | Clinical Materials 6:251-264   |
| AF                   |  | Bloebaum, Roy D.   | Human bone ingrowth and materials  | 1996     | Bloebaum, R.D., ed.; Society for Biomaterials: Denver, CO -- J Arthroplasty 8(2):203-211, 1995; J Biol Mat Res 28:537-544, 1994. |
| AG                   |  | Blumenthal, Neil & Steinberg, June                             | The use of collagen membrane barriers in conjunction with combined demineralized bone-collagen gel implants in human infrabony defects                 | 6/90     | J Periodontol 61:319-327   |
| AH                   |  | Collagen Corporation   | Introducing Zyplast(R) Implant: A stable solution to deeper problems   | 1986     | Zyplast(R) product information   |
| AI                   |  | Collagen Corporation   | Zyderm(TM) Collagen Implant Physician Package Insert   | 5/81     | Zyderm(TM) Collagen Implant Physician Package Insert   |
| AJ                   |  | Cornell, Charles N.  | Initial clinical experience with use of Collagraft(TM) as a bone graft substitute  | 1992     | Techniques in Orthopaedics 7(2):55-63  |
| AK                   |  | Editor(s)  | Second-hand bones?   | 12/12/92 | Lancet 340:1443  |
| AL                   |  | Einhorn, T.A.  | Enhancement of bone repair using biomaterials  | 1996     | Einhorn, T.A., ed.; Society for Biomaterials: Denver, CO   |
| AM                   |  | Frenkel, S.R.; Moskovich, R. & Spivak, J. et al.               | Demineralized bone matrix: Enhancement of spinal fusion  | 1993     | Spine 18(12):1634-1639   |

EXAMINER

DATE  
CONSIDERED

3-13-98

Form PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
TB-101SERIAL NO.  
08/816,079

## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

## APPLICANT(S)

Grooms, Jamie M; Wironen, John F.

## FILING DATE

March 13, 1997

## GROUP

## OTHER PRIOR ART

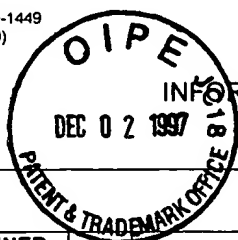
(Including Author, Title, Date, Pertinent Pages, etc.)

| *EXAMINER<br>INITIAL | AUTHOR(S)   | TITLE   | DATE    | PUBLICATION INFORMATION  |
|----------------------|---|---|---------|--|
| AA                   | Glowacki, Julie;<br>Kaban, Leonard B.;<br>& Murray, Joseph E.<br>et al. | Application of the biological<br>principle of induced osteogenesis<br>for craniofacial defects  | 5/2/81  | Lancet , pp. 959-963   |
| AB                   | Hardin, Charles K.  | Banked bone   | 1994    | Otolaryngologic Clin. N.<br>America 27(5):911-925                                  |
| AC                   | Kligman, Albert M.<br>& Armstrong, Rosa<br>C.                           | Histologic response to intradermal<br>Zyderm and Zyplast<br>(glutaraldehyde cross-linked)<br>collagen in humans   | 4/96    | J Dermatol Surg Oncol<br>12(4):351-357   |
| AD                   | Kocialkowski, A;<br>Wallace W. Angus;<br>& Prince H.G.                  | Clinical experience with a new<br>artificial bone graft: Preliminary<br>results of a prospective study  | 1990    | Injury 21:142-144  |
| AE                   | Lasa, C.; Hollinger,<br>J; & Droham W. et<br>al.                        | Delivery of demineralized bone<br>powder by fibrin sealant  | 11/95   | Plastic and Reconstructive<br>Surg. 96(6):1409-1417                                |
| AF                   | Low, Samuel B;<br>King, Caleb &<br>Krieger, Jared                       | An evaluation of Perioglas(R) for<br>the treatment of infrabony osseous<br>defects  | 2/95    | Abstract submitted to<br>International J of Periodontic<br>& Restorative Dentistry |
| AG                   | Mehlisch, Donald<br>R.; Leider, Alan S &<br>Roberts, W.<br>Eugene       | Histologic evaluation of the<br>bone/graft interface after<br>mandibular augmentation with<br>hydroxylapatite/purified fibrillar<br>collagen composite implants | 1990    | Oral Surg Oral Med Oral<br>Pathol 70:685-692                                       |
| AH                   | Muschler, George<br>F; Hyodo, Akira; &<br>Manning, Tim et al.           | Evaluation of human bone<br>morphogenetic protein 2 in a<br>canine spinal fusion model  | 11/94   | Clin. Orthopaedics<br>308:229-240  |
| AI                   | Nathan, Ranga M.;<br>Bentz, Hanne;<br>Armstrong, Rosa M.<br>et al.      | Osteogenesis in rats with an<br>inductive bovine composite  | 1988    | J. Orthop Res 6(3):324-334   |
| AJ                   | Oonishi, H.;<br>Kushitani S., Iwaki,<br>H. et al.                       | Comparative bone formation in<br>several kinds of bioceramic<br>granules  | Unknown | Bioceramics 8:137-144  |
| AK                   | Osteotech, Inc.   | "The next generation in bone<br>grafting technology"  | 1995    | grafton(r) Demineralized<br>Bone Matrix (DBM) product<br>information               |

EXAMINER

DATE  
CONSIDERED

3-13-98

Form PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
TB-101SERIAL NO.  
08/816,079

## INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

## APPLICANT(S)

Grooms, Jamie M; Wironen, John F.

## FILING DATE

March 13, 1997

## GROUP

## OTHER PRIOR ART

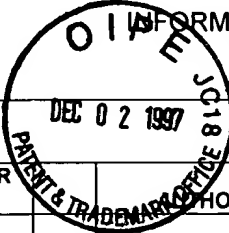
(Including Author, Title, Date, Pertinent Pages, etc.)

| *EXAMINER<br>INITIAL |  | AUTHOR(S)  | TITLE   | DATE    | PUBLICATION INFORMATION   |
|----------------------|--|--|---|---------|---|
| AA                   |  | Roberts, W.<br>Eugene  | Bone tissue interface   | 1988    | J. Dental Education<br>52(12):804-809   |
| AB                   |  | Rutherford, R.<br>Bruce; Sampath, T.<br>Kuber & Rueger,<br>David C. et al. | Use of bovine osteogenic protein to<br>promote rapid osseointegration of<br>endosseous dental implants  | 1992    | Int. J. Oral Maxillofac<br>Implants 7:297-301                                 |
| AC                   |  | Scarborough, N.  | Bone repair using allografts  | 1996    | Scarborough N., ed.;<br>Society for Biomaterials                              |
| AD                   |  | Senn, N.   | On the healing of aseptic bone<br>cavities by implantation of<br>antiseptic decalcified bone  | 1889    | American J. Med. Sci.<br>98(3):219-243  |
| AE                   |  | Sperling, L.H.   | Introduction to Physical Polymer<br>Science   | 1992    | John Wiley and Sons, Inc.,<br>2nd ed.: New York                               |
| AF                   |  | St. John, Kenneth<br>R.; Zardiackas, Lyle<br>D.; Black, R. John<br>et al.  | Response of canine bone to a<br>synthetic bone graft material   | 1992    | Clinical Materials, pp. 49-55   |
| AG                   |  | Stegman, Samuel<br>J.; Chu, Shirley &<br>Bensch, Klaus et al.              | A light and electron microscopic<br>evaluation of Zyderm Collagen and<br>Zyplast implants in aging human<br>facial skin                           | 12/87   | Arch Dermatol<br>123:1644-1649  |
| AH                   |  | Strates, Basil S. &<br>Tiedman, Jeffrey J.                                 | Contribution of osteoinductive and<br>osteoconductive properties of<br>demineralized bone matrix to<br>skeletal repair                            | 1993    | European J. Experimental<br>Musculoskeletal Res<br>2:61-67                    |
| AI                   |  | Urist, Marshall R.   | Bone morphogenetic protein  | 1992    | Urist, M.R., ed.; W.B.<br>Saunders Co., Philadelphia,<br>Chapter 7, pp. 70-83 |
| AJ                   |  | Urist, M.R.; Chang,<br>J.J. & Lietze, A. et<br>al.                         | Preparation and bioassay of bone<br>morphogenetic protein and<br>polypeptide fragments  | 1987    | Methods in Enzymology<br>146:294-312  |
| AK                   |  | Urist, M.R.; Huo,<br>Y.K. & Brownell,<br>A.G. et al.                       | Purification of bovine bone<br>morphogenetic protein by<br>hydroxyapatite chromatography  | 1984    | Proc. Nat Acad Sci, USA<br>81:371-375   |
| AL                   |  | Vrouwenvelder,<br>W.C.A.; Groot,<br>C.G.; & de Groot, K.                   | Histological and biochemical<br>evaluation of osteoblasts cultured<br>on bioactive glass, hydroxylapatite,<br>titanium alloy, and stainless steel | 1993    | J. Biomedical Materials Res.<br>27:465-475                                    |
| AM                   |  | Walker, R. Dixon;<br>Wilson, June &<br>Clark, A.E.                         | Injectable bioglass as a potential<br>substitute for injectable<br>polytetrafluoroethylene  | 8/92    | J. Urology 148:645-647  |
| AM                   |  | Wheeler, D.L.;<br>Senft, D.C.; & Scott,<br>M.D. et al.                     | Histological analysis of<br>Bioglass(R)-filled radius defects   | Unknown | Bioceramics 8:69-73   |

EXAMINER

DATE  
CONSIDERED

3-13-98

Form PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
TB-101SERIAL NO.  
08/816,079INFORMATION DISCLOSURE STATEMENT  
(Use several sheets if necessary)

APPLICANT(S)

Grooms, Jamie M; Wironen, John F.

FILING DATE

GROUP

March 13, 1997

## OTHER PRIOR ART

(Including Author, Title, Date, Pertinent Pages, etc.)

| *EXAMINER<br>INITIAL | AUTHOR(S)                                      | TITLE   | DATE    | PUBLICATION INFORMATION  |
|----------------------|--|---|---------|--|
| AA                   | Wilson, J. & Low, S. B.                        | Bioactive ceramics for periodontal treatment: comparative studies in the Patus monkey   | 1992    | J. Applied Biomaterials 3:123-129  |
| AB                   | Wilson, J., Pigott, G.H. & Schoen, F.J. et al. | Toxicology and biocompatibility of bioglasses   | 1981    | J. Biomedical Materials Res 15:805-817   |
| AC                   | Wilson, J.; Yu, L.T.; & Beale, B.S.            | Bone augmentation using Bioglass particulates in dogs: Pilot study  | Unknown | Bioceramics 5:139-146  |
| AD                   | Wilson, June; Clark, A.E.; Douek, E. et al.    | Clinical applications of Bioglass(R) implants   | 7/94    | Paper presented at the 7th International Symposium on Ceramics in Medicine, July 28-30, 1994, Turku, Finland |
| AE                   | Wozney, J.M.; Rosen, V; Byrne, M. et al.       | Growth factors influencing bone development   | 1990    | J. Cell Sci. Suppl. 13:149-156   |
| AF                   | Wozney, John M.                                | Bone morphogenetic proteins   | 1989    | Progress in Growth Factor Research 1:267-280   |
| AG                   | Yazdi, M.; Bernick, S.; Paule, W. et al.       | Postmortem degradation of demineralized bone matrix osteoinductive potential  | 1/91    | Clinical Orthopaedics Rel. Res. 262:281-285  |
| AH                   | Younger, E. M. & Chapman, M. W.                | Morbidity at bone graft donor sites   | 1989    | J. Orthopaedic Trauma 3(3):192-195   |
| AI                   | Zimmer, Inc.                                   | "Fracture Management": Collagraft(R) Bone Graft Matrix (Nonosteoinductive bone void-filler): The new standard for bone grafting | 1993    | Collagraft(R) product information  |
| AJ                   | Zimmer, Inc.                                   | Highlights of safety and effectiveness studies for Collagraft(R) Bone Graft Matrix (Nonosteoinductive Bone Void Filler)         | 1992    | Collagraft(R) product information  |
| AK                   | Zimmer, Inc.                                   | "Bone Grafting"   | 1993    | Teaching materials on bone grafting for use by Zimmer, Inc.'s Collagraft(R) sales representatives            |
| AL                   | Zimmer, Inc.                                   | Collagraft(R) Strip Bone Graft Matrix   | 1994    | Collagraft(R) Strip product information  |
| AM                   | Zimmer, Inc.                                   | Collagraft(R) Bone Graft Matrix (Nonosteoinductive Bone Void Filler)  | 5/93    | Collagraft(R) Bone Graft Matrix (Nonosteoinductive Bone Void Filler) product information                     |

EXAMINER

DATE  
CONSIDERED

313-28